

$^9\text{Be}(^{10}\text{C}, ^{12}\text{C})$ 2012Ma10

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu		NP A968, 71 (2017)	1-Jan-2017

2012Ma10: XUNDL dataset compiled by TUNL, 2012.

The α -particle correlations following $^{12}\text{C}^*$ breakup were studied at $E(^{10}\text{C})=10.7$ MeV/nucleon (Texas A&M) in search of direct 3-body breakup of $^{12}\text{C}^*(7.65\text{ MeV})$ as suggested by (2011Ra43).

The $^9\text{Be}(^{10}\text{C}, ^{12}\text{C})$ and $^{\text{nat}}\text{C}(^{10}\text{C}, ^{12}\text{C})$ 2-neutron exchange reactions populated $^{12}\text{C}^*$. The α -unbound states broke up into 3- α particles and were detected in an array of four position sensitive ΔE -E telescopes. The ^{12}C excitation energies and α -particle momenta were evaluated in search of evidence for direct 3-body decay. No evidence was found for direct 3-body decay for either $^{12}\text{C}^*(7.65\text{ MeV})$ or $^{12}\text{C}^*(9.64\text{ MeV})$.

 ^{12}C Levels

E(level) [†]	J ^π [†]	Comments
7.65×10^3 [‡]	0 ⁺	Contribution from a 3-body decay mode producing three equal-energy α particles is less than 0.45%.
9.64×10^3 [‡]	3 ⁻	

[†] From Adopted Levels.

[‡] Breakup decay is consistent with 100% decay via $^8\text{Be}_{\text{g.s.}}$.